REMARKS

The present application provides an efficient method for preparing a transformed cotton plant which uses petioles as explants. Claims 1-18 are pending in the application. In this response Claims 1-14 and 16-18 are amended. Several typographical errors identified in the specification have been corrected.

Objections Relating to Informalities

Claims 2-18 were objected to for certain informalities. In this response Claims 2-18 are amended to comply with those objections. In addition, Applicants have reviewed the claims and corrected typographical errors that appeared in claims 17-18 and have deleted the terms "ranges" and "ranging" from Claim 16-17 to make the claims clearer. Applicants respectfully ask that the objections to the informalities be withdrawn.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1-18 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as their invention. In response step (f) of Claim 1 is amended to recite "regenerating an embryoid to obtain a transgenic cotton plant" so that it is consistent with the tense of the preamble of the claim.

Claims 4-5 and 8-11 are amended to replace "in an amount" with "at a concentration" to make clear that the claims refer to the concentration of the indicated medium component.

Claim 7 is amended to make clear that it is the embryroid regeneration of step (f) that is carried out in a medium having a source of nitrogen selected from the group consisting of asparagine, glutamine or both asparagine and glutamine.

Applicants respectfully ask that the rejections under 35 U.S.C. § 112, second paragraph be withdrawn in view of these amendments.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-6 and 15-17 are rejected under 35 U.S.C. § 102(b) as being anticipated by Strickland. Applicants respectfully traverse this rejection and ask that it be withdrawn.

Strickland discloses a method for regenerating cotton plants from explant tissue where the explant is cultivated on cotton initiation medium having no exogenous plant hormones. The examples of the Strickland application use hypocotyls as explants. The reference provides no examples of transformation of callus derived from other cotton plant tissues, including petioles. It also provides no examples of the subsequent regeneration of whole transgenic plants using the disclosed hormone free regeneration method.

At page 11, lines 12 - 15 of the application, Strickland merely asserts, but does not demonstrate, that the hormone free regeneration method is applicable to numerous kinds of cotton tissue explants, including petioles. However, when this sentence is read in the context of the complete paragraph beginning at line 7 of page 11, it is clear that Strickland was doing nothing more than predicting that his hormone free regeneration could possibly be used for numerous kinds of cotton tissue in addition to the hypocotyls used in the examples of the application. The application states:

> The conducive nature of hormone free regeneration also means that cotton plant tissues which have not been commonly utilized for regeneration can be[sic] now be used to produce somatic embryos. Leaf tissue are one example of a cotton tissue which has heretofore not been utilized in the regeneration of somatic embryos. The method is thus applicable to explants of numerous kinds of cotton tissue, including hypocotyl, leaf, root, petiole tissue and cotton embryos.

Strickland's prediction that his method has applicability to other cotton tissues is not supported by the disclosure of his application. The examples of the reference report only recovery of embryogenic callus from explants of hypocotyl tissue from five different cotton cultivars. See Tables 2 and 3 of the Strickland reference. The results reported by Strickland using hypocotyl tissues as explants do not disclose or even suggest a method for preparing transgenic cotton plants using explants of tissues that had never before been successfully transformed at the time the Strickland application was filed. In contrast, examples of the present application demonstrate the successful and efficient production of transgenic cotton plants using explants of petioles. See Examples 5 and 6 of the present application.

Moreover, embryogenic calli do not necessarily form somatic embryos, nor do those somatic embryos necessarily regenerate into plants. Strickland demonstrates neither somatic embryos, nor regenerated plants using his method for producing a transformed cotton plant with only hypocotyl tissue as an explant. Additionally, the kanamycin resistance used by Strickland as a marker for transformation does not necessarily indicate the successful integration of foreign genes.

Finally, Applicants respectfully refer the Examiner to U.S. Patent No. 5,846,797, which issued to Strickland from application serial no. 08/539,176, the U.S. priority application

corresponding to the cited Strickland PCT patent publication. Both independent claims of the '797 patent are limited to a method for regenerating cotton plants where the explant is hypocotyl tissue cut from a seedling which has been grown in the dark. Claim 2 of the cited Strickland publication WO97/12512, which was directed to explant tissue selected from a group of tissues including petioles, does not appear in the claims of the issued U.S. Patent. This observation is consistent with Applicants' assertions that the method disclosed by the published Strickland patent application, taken with the mere mention of a tissue type that had not previously been transformed and was not used in any example of the publication, does not disclose a method for preparing a transgenic cotton plant using petioles as explants.

Applicants respectfully assert that the Strickland application does not anticipate the present application as it does not disclose a method for producing a transgenic cotton plant using petioles as explants, and respectfully request that the rejection of claims 1-6 and 15-17, as being anticipated by the Strickland publication, be withdrawn.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-18 are rejected as being unpatentable over Strickland (WO97/12512) in view of Finer (Plant Cell Reports (1988) 7:399-402). Finer is cited as disclosing the use of medium having glutamine as a nitrogen source for embryoid formation and the use of a medium for producing suspension cultures from callus having 0.5 mg/l 2,4-dichlorophenoxyacetic acid and 0.1 mg/l kinetin.

To establish a *prima facia* case of obviousness, the cited prior art must disclose or at least suggest to one of ordinary skill in the art each element of the claimed invention. The

combination of Strickland and Finer does not teach or even suggest the invention of the present claims.

As discussed above Strickland does not provide a method for producing transgenic cotton plants using petioles as explants. Strickland's mention of cotton tissues other than the hypocotyl tissue used in his limited examples is nothing more than an expression of his hope that his disclosed method may work with other explant tissues.

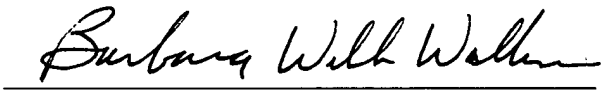
Finer does not provide further disclosures that overcome the deficiencies of the Strickland reference. Finer discloses a method for plant regeneration from somatic embryogenic suspension cultures of cotton initiated from cotyledonary tissues.

Taken separately or together the cited references do not set forth or even suggest the invention of the present application. In fact Strickland's teachings of a method for generating embryogenic callus from a cotton hypocotyl tissue explant that is cultivated on cotton initiation medium having no exogenous plant hormones actually teaches away from the regeneration methods of Finer, which use initiation medium containing plant hormones to establish suspension cultures of . Thus, the cited references, taken either together or individually, would not have made the method of preparing a transgenic cotton plant using petioles as explants as claimed in the present application obvious to a person of ordinary skill in the art at the time the invention was made.

Applicants respectively assert that the rejection of claims 1-18 over Strickland, in view of Finer was made in error and respectively ask that the rejection be withdrawn.

Applicants believe the present claims are in condition for allowance and respectfully request a timely notice to that effect. Should additional issues arise that can be effectively dealt with in a timely discussion with Applicants' representative, the Examiner is respectfully asked to contact the undersigned so that this case can be quickly passed to issue.

Respectfully submitted,

By 

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